DEPARTMENT OF TRANSPORTATION
DIVISION OF ENGINEERING SERVICES
Office of Structural Materials
Quality Assurance and Source Inspection

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Contract #: 04-0120F4
Cty: SF/ALA Rte: 80 PM: 13.2/13.9
File #: 1.28

WELDING INSPECTION REPORT

Resident Engineer: Siegenthaler, Peter
Address: 333 Burma Road
City: Oakland, CA 94607

Report No: WIR-025080
Date Inspected: 07-Jul-2011

Project Name: SAS Superstructure
Prime Contractor: American Bridge/Fluor Enterprises, a JV
Contractor: American Bridge/Fluor Enterprises, a JV

OSM Arrival Time: 700
OSM Departure Time: 1730
Location: Job Site

CWI Name:	See Below			**CWI Present:**	☑ Yes	☐ No	
Inspected CWI report:	☐ Yes	☑ No	☐ N/A	**Rod Oven in Use:**	☑ Yes	☐ No	☐ N/A
Electrode to specification:	☑ Yes	☐ No	☐ N/A	**Weld Procedures Followed:**	☑ Yes	☐ No	☐ N/A
Qualified Welders:	☑ Yes	☐ No	☐ N/A	**Verified Joint Fit-up:**	☑ Yes	☐ No	☐ N/A
Approved Drawings:	☑ Yes	☐ No	☐ N/A	**Approved WPS:**	☑ Yes	☐ No	☐ N/A
				Delayed / Cancelled:	☐ Yes	☑ No	☐ N/A

Bridge No: 34-0006
Component: Orthotropic Box Girder & Tower

Summary of Items Observed:

At the start of the shift the Quality Assurance Inspector (QAI) traveled to the project site and observed the work and the inspection performed by American Bridge/Fluor Enterprises (AB/F) personnel. The inspection was performed on the various field fit-up of weld joints and the Complete Joint Penetration. The welding was performed utilizing the Shielded Metal Arc Welding (SMAW), Fluxed Cored Arc Welding (FCAW-G) and the Sugmerged Arc Welding (SAW) Process.

A). OBG 11W/12W

The QAI observed the continuous tack welding of the backing bar to the deck plate identified as WN: 11W-12W-A. The welding was performed by Wai Kitlai ID-2953 and Hua Qiang Hwang ID-2930 utilizing the FCAW-G process as per the Welding Procedure Specification (WPS) identified as ABF-WPS-D15-F3200-2 Rev. 0 which was also used by the QC inspector, William Sherwood, as a reference to monitor the in process welding and to verify the welding parameters. The welding was performed in the horizontal position (2F) with the work placed so that the fillet weld metal appeared to be deposited on the upper side of the horizontal surface and against the vertical surface. The welding parameters and surface temperatures were verified and recorded by the QC inspector.

The QAI also observed the SAW process of the bottom plate field splice identified as Weld Number (WN): 11W-12W-D. The welding was performed by the welding operator James Zhen ID-6001utilizing the Welding Procedure Specification (WPS) ABF-WPS-D15-4042B-1 Rev. 0. The WPS was also used by Mr. Sherwood as a reference to monitor the welding and to verify welding parameters which were verified and noted as follows by the

QC inspector; 560 amps, 32.4 volts and a travel speed measured at 392 mm per minute.

The welding and the inspection performed by William Sherwood appeared to comply with the contract specifications.

B). OBG 11E/12E

The QAI observed the continued CJP welding of the edge plate field splice identified as Weld Number (WN): 11E-12E-F1. The welding was performed by Wen Han Yu ID-6317 utilizing the Welding Procedure Specification (WPS) ABF-WPS-D15-1110A-1 Rev. 1. The WPS was also utilized by the QC Inspector Fred Von Hoff as a reference when monitoring the welding and verifying the welding parameters. The in process welding and inspection appeared to comply with the contract specifications.

C). Lifting Lug Holes

The QAI observed the CJP welding of the lifting lug holes located on the west orthotropic box girders identified as WN: 9E-PP79-E4-W1. The welding was performed by Mike Jiminez ID-4671 utilizing the WPS identified as ABF-WPS-D15-1050A-CU, Rev. 0. The QAI also observed the QC inspector's perform the visual inspection and verify the welding parameters during the production welding. The inspections performed by Fred Von Hoff appeared to comply with the contract specifications. The welding of the lifting lug holes was not completed during this scheduled shift.

D). Pipe Welds

The QAI observed the CJP Welding of the 2.5" domestic water and 4.0" compressed air line systems pipe run to riser and are located at the W2-E1 and W2-W1 Bent Cap. along E5 and W5 OBG grid lines. The welding was performed by Rick Kiikvee ID-5319 utilizing the SMAW process as per the WPS identified as 1-12-1. The in process welding and the inspection performed by the QC inspector, Steve Jensen, appeared to meet the requirements of the contract specifications.

E). QC Ultrasonic Testing

This QAI performed a ultrasonic verification test on various Complete Joint Penetration (CJP) groove welds. A total area of approximately 10% was randomly tested to verify the weld and testing by QC meet the requirements of the contract documents. For additional information and locations see the ultrasonic test report TL-6027 generated on this date.

The QAI observed the preliminary Ultrasonic Testing (UT) of the tower shear plate identified as WN: E-042 and N-042. The testing was performed by the QC technician Jesse Cayabyab utilizing a G.E./Krautkramer USM 35X. The QC technician performed the required longitudinal wave technique, utilizing a 1.0" diameter transducer to perform the examination for base metal soundness and the shear wave technique for the examination of weld soundness which was performed utilizing a .625" x .750" rectangular transducer. The QC testing was not completed during this shift.

E). QA Verification

This QA Inspector also performed a daily review and update of the field document control tracking records regarding the Orthotropic Box Girders, Longitudinal and Transverse "A" Deck Stiffeners and Deck Access Holes.

QA Summary

The welding was performed in the flat and overhead positions utilizing the E7018-H4R low hydrogen electrodes , E71T-1 and EM12K wire consumables. The 3.2 mm and 4.0 mm electrodes were stored in electrically heated, thermostatically controlled oven after removal from the sealed containers. The exposure limits of the electrodes appeared to comply with the minimum storage oven temperature of 120 degrees Celsius as per the contract documents. The welding parameters and surface temperatures were verified by the QC inspector's utilizing a Fluke 337 clamp meter to measure the electrical welding parameters and Tempil Heat Indicators for verifying the preheat and interpass temperatures. At the time of the observation no issues were noted by the QAI.

The digital photographs below illustrate some of the work observed during this scheduled work date.

Summary of Conversations:

There were general conversations with Quality Control Lead Inspector, Bonifacio Daquinag, Jr., at the start of the shift regarding the location of welding, inspection and N.D.E. testing personnel scheduled for this shift.

Comments

This report is for the purpose of determining conformance with the contract documents and is not for the purpose of making repair or fit for purpose recommendations. Should you require recommendations concerning repairs or remedial efforts please contact Nina Choy (510) 385-5910, who represents the Office of Structural Materials for your project.

Inspected By:	Reyes,Danny	Quality Assurance Inspector
Reviewed By:	Levell,Bill	QA Reviewer